The Application of ChatGPT in Intercultural Communication and foreign Language Learning
-- The Effects and Limitations of ChatGPT on Foreign Language Learners' Intercultural Competence

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Abstract:

People's work and learning have been greatly impacted by ChatGPT's quick development. Particularly in the field of foreign language learning, where ChatGPT is highly valued for its superior text analysis and resource acquisition capabilities. Fluency in the language and Intercultural Competence (IC) are essential for language learners in foreign cultures. Thus, the purpose of this study is to investigate how learners' IC is affected by ChatGPT's mediation role. This study aims to investigate learners' experiences in this process and determine the potential and constraints of ChatGPT as a communication mediator by employing qualitative research methods. The study's findings indicate that ChatGPT's primary IC improvement strengths are in language proficiency and cultural awareness, with the drawback of not being able to offer practical instruction to improve communicative competence. Additional investigation may investigate ChatGPT's impact on communication as a cross-cultural mediator from the viewpoint of native speakers of the target language.

Keywords: Intercultural Competence, Cultural misunderstanding, ChatGPT, language learning.

1. Introduction

Large Language Models (LMs), as represented by ChatGPT, have become increasingly popular, making computer-assisted learning and AI applications to enhance learning indispensable for today's language learners. However, as key elements in evaluating how effective the language learning is, cultural awareness

and IC determine the necessity for learners to engage in intercultural communication in authentic settings. Meanwhile, with the highly developed Internet technology, real-time cross-cultural contact has become within reach. Social media platforms like WhatsApp have a significant effect on the improvement of Second Language (L2) learners' oral and grammatical proficiency [1]. Communication is often considered as an integral part of linguistic competence. However, prior studies have indicated that grammatical proficiency is not often the defining factor of pragmatic competence, which is the capacity to utilize language effectively in social interactions [2]. The fundamental components of Intercultural Communicative Competence (ICC), which demonstrates the capacity to communicate effectively with native speakers of the target language culture, are cultural awareness, communicative competence, and integrated pragmatic competence [3]. All three competencies play an equal role in intercultural communication. However, a lack of cultural competence often results in cross-cultural misunderstandings and strained relationships, hindering L2 learners from reaching their desired outcomes in communicative foreign language learning. Effective communication in a second language requires not only linguistic skills but also an understanding of the cultural context. In the context of this issue, it is particularly important to find the effective ways to apply ChatGPT in intercultural communication. Accordingly, this study probed the question 'whether ChatGPT can play the role of a mediator in intercultural communication by providing learners with guidance on utterances based on the cultural norms of the target language, thus avoiding intercultural misunderstandings while enhancing their IC'. The study applied semi-structured interviews as a qualitative research method. It was conducted with participants in long-term cross-cultural settings and had in-depth experience with ChatGPT. The goal is to explore the real cross-cultural experiences of the participants and their insights into ChatGPT as a cross-cultural mediator. The findings summarize the extent and manner in which ChatGPT affects ICC as a composite competency, identify its potential to avoid cultural misunderstandings and point out the limitations of ChatGPT as a mediator of communication. The results fill the research gap of cross-cultural communication related to ChatGPT, providing methodological guidance for L2 learners and language educators. Previous studies showed that GPT-3 provides support for grammar and vocabulary explanations, syntax optimization, and dialogue practice in language learning [4]. It also provides a highly customized learning experience at different stages [5]. ChatGPT has also significantly improved critical thinking and digital literacy in language learners [6]. Another experiment at Griffith University demonstrat-

ed that ChatGPT could train learners in critical cultural awareness, showing the potential to support cultural sensitivity training [7]. However, such research processes focus on changes in language proficiency, lack summaries of learner intuition, and do not test the limitations of the ChatGPT in real-world communication. Specifically, IC is a multiple competence. In Dervan's theoretical study, the assessment of intercultural competence was summarized into three items [8]. First is the ability to identify the other person's self-identity and cultural value identity through their discourse. Second is discourse comprehension, which means excellent language skills in a dialogue that accurately convey semantics while understanding the semantics of another person. Third is to recognize that an individual's words and actions are influenced by emotions, thus allowing people to control their own emotions in communication, while filtering out the true meaning of words in the emotional expressions of others. At the same time, Dervan's study noted that it is difficult for academic tests to accurately reflect students' IC because they can make predictive preparations. However, the study did not provide recommendations for effective assessment methods. Further research is needed to provide findings on the specific impact of ChatGPT on the ICC of learners in intercultural communication.

This paper will first describe the background and problems involved in the study and design the appropriate research methodology based on the findings of the literature study. Data analysis methods such as thematic and narrative analysis were used to explore patterns in the research themes. Finally, for the benefit of foreign language learners, educators, and researchers in related fields, the study's conclusions will answer the previously posed questions and point out this study's limitations.

2. Methodology

2.1 Research Respondents

This qualitative study conducted semi-structured interviews with L2 learners in an intercultural setting for a year or more. The aim was to collect respondents' perceptions and experiences of ChatGPT's role in alleviating cultural misunderstandings, thus exploring the potential and limitations of ChatGPT as a mediator in this context. Most of the respondents were English as a Second Language Learners (ESL) and all were proficient or fluent in English, with extensive cross-cultural communication experience and more than one year of ChatGPT experience. Sample size seen. In terms of demographic characteristics, the interviewees' target cultures included the United States and the United Kingdom to ensure a wide range of

perspectives.

2.2 Study Tools

2.2.1 Semi-structured interviews

Since the study involved learners' intercultural communicative behaviors and feelings before and after the ChatGPT intervention, the study is based on the semi-structured interview to balance the relevance and flexibility of the questions. The interview questions consisted of four segments, including the interviewees' experiences of cross-cultural misunderstandings, experiences with ChatGPT, understanding of ICC, and ChatGPT in interpersonal interactions. The sum of the questions was adjusted as appropriate depending on the responses. There were no fewer than 11 in each interview. Interviews were conducted by online video conference with an average of 30 minutes in length; the process was recorded throughout. Interviewees participated voluntarily with full knowledge of the interview topic and were not asked leading questions.

The first part of the interview is based on questions and answers, aiming to extract regular and enlightening ideas that fit the theme. Besides, to discover the potential strengths and weaknesses of ChatGPT in intercultural communication and its practical impact on learners' ICC. In the second part of the interview, the study will record the process and intuition of respondents interacting with ChatGPT in a pre-set cross-cultural communication scenario. This part aimed to test the effectiveness of ChatGPT in communicative scenarios.

In response to the interviews, the study used thematic and narrative analysis to distil the specific impact and limitations of ChatGPT on ICC. Finally, the results of the interview and observation were synthesized for data analysis to uncover ChatGPT's strengths and weaknesses for ICC enhancement.

2.2.2 Study tools design

The original ChatGPT mode for this study was built on ChatGPT version 4o, called Cultural Bridge. The mode can be used as a mediator of cross-cultural interactions to help ESL learners avoid cultural misunderstandings. The main functions of the mode include interpreting cultural rules or etiquette involved in the discourse of native English speakers, providing suggestions for utterances, and explaining confusing cultural phenomena. The cultural rules referenced in the mode are predominantly British and American, and learners can select as they wish.

3. Study Process

3.1 Semi-structured Interviews

This study used thematic and narrative analysis, aimed to summarize the key issues of the interviews relative to the research theme, and to distil the interviewees' perceptions of the effectiveness of ChatGPT in communication and its impact on ICC.

3.1.1 Analysis of interview results

The thematic analysis form for the interview results summarizes the most frequently discussed items in the narratives of the seven interviewees, from which key themes and sub-themes related to the content of the study are outlined. In the table 1, it shows the representative statements of interviewees and the frequency with which the sub-themes were mentioned.

Table 1. Thematic analysis of interview

Theme	Sub-theme	Quote	Frequency
1. Cross-cultural misunderstandings and the causes	1.1 Language barriers	'The biggest problem is that, there was a lot of things I didn't know how to express with accurate English.'	5
	1.2 Cultural and perspective differences	'For 'modelling', a common concept in Chinese culture, I needed to explain to my Indian professor in terms of history, politics and values.'	4
	1.3 Not controllable factors	'If there is a huge gap in the level of cognition between the two persons, misunderstandings can still occur despite fluency.'	2

2. Limitations of ChatGPT as a mediator of intercultural communication	2.1 ChatGPT boundaries in interpersonal scenarios	'When the other person hits a cultural barrier and is willing to use AI to keep the dialogue going, I would rather feel that he/she is sincere.'	4
	2.2 Active learning for inter-cultural competence	'Communicative competence is a huge system with many sub-competencies, and dialogue practice hardly improves overall communicative competence.'	5
	2.3 Limitations of ChatGPT's algorithm	'ChatGPT has no understanding, only input and output. It has no logic, it just summarizes existing answers.'	6
3. ChatGPT and the Enhancement of ICC	3.1 ChatGPT assists passive learning	'The ChatGPT database is huge, so in terms of a certain cultural knowledge it can give side-by-side comparisons, which is efficient for my learning.'	3
	3.2 ChatGPT Assisted Spoken Language Learning	'For grammar correction, ChatGPT is careful in its wording and does not detract from the subtle meanings of sentences.'	3
4. Keys to good cross-cultural interaction	4.1 Cultural Sensitivity and Competence	'After a misunderstanding has occurred, I will consider whether my words or actions might have been offensive to the other person in a similar situation.'	6
	4.2 Communication skills	'If he/she respects you, they will know what to do and not do, in which case there is less likely to be discord.'	3

3.2 Observation

This is the cross-cultural communication scenario set, the respondent's British friend sent you this message: "She is probably trying to get rid of a Wrackspurt."
The original responses of ChatGPT mode Cultural Bridge about this cultural confusion, which is shown in Table 2, were provided to respondents. Afterward, respondents will be asked to show their perceptions of the usability of ChatGPT-generated responses. The answer is also helpful in comparing the differences between ChatGPT and the human brains in terms of communication.

Table 2. ChatGPT mode's responses to the cross-cultural communication scenario question

Type of answer	Original text
Cultural interpretation	The phrase „She is probably trying to get rid of a Wrackspurt" is a playful reference to the Harry Potter series, specifically to creatures called Wrackspurts, which are invisible creatures that are said to cause one's thoughts to go fuzzy. This phrase might be used humorously to suggest that someone seems distracted or absent-minded, implying that they might be trying to clear their head.
Wording suggestions	If you're responding to this in a conversation, it's important to understand the context: 1. Playful Tone: The speaker is being lighthearted and not serious. 2. Familiarity with Harry Potter: The reference assumes some knowledge of the Harry Potter universe. If you're familiar with it, you can respond with a similarly playful or light-hearted comment.
Recommended response	If you know the reference: „Haha, I must have a few Wrackspurts of my own!" If you don't know the reference: „I'm not familiar with Wrackspurts, but it sounds like I might need to get rid of a few too!"

Respondents commented on the responses given by Chat GPT based on the following two questions. Would you reply to your friend with ChatGPT's suggested answer? How would you reply to your friend after knowing the sentence's meaning and cultural context?
57% of respondents' answers were negative in question 1, with the remaining 43% saying they might use it in the condition when they did not know what to say. The main reason is that ChatGPT's given answers were stiff in tone and failed to maintain the humorous atmosphere of the dialogue.
'I'll only learn specific expressions from ChatGPT's an-

swers, like how to respond the next time I'm in a similar situation. But I won't use this as my reply.' (P3)

In addition, 75% of respondents who said no in the first question said in question 2 that they would delve deeper into their mutual interests, such as starting to talk about Harry Potter; the remaining 25% said they would change the subject.

3.3 Narrative Analysis

This session analyses the potential and limitations of ChatGPT in ICC enhancement by comparing each respondent's experience of ChatGPT's intervention in intercultural communication.

The results point to a consensual limitation of ChatGPT, which is its inability to provide groundbreaking insights and to accurately understand the situation and the subtle intentions of the speaker as reflected in the words in an interpersonal interaction. As a result, it is difficult for ChatGPT to provide effective speaking and behavioral guidance for communicative problems.

'The answer (from ChatGPT) was awkward and failed to catch the joke. It turned the atmosphere a little weird. However, it's okay to answer people with such a tone in the workplace.' (P6)

Meanwhile, 43% of the respondents said that ChatGPT's quick answer to a concept or cultural rule is its obvious advantage, efficiently bridging the cultural gap between communicators. However, the experiences of the interviewees pointed out that, what contributed most to the reshaping and polishing of their behavior and awareness for ICC's enhancement was trial and error.

'Before communicating, I would use ChatGPT to learn about the target cultural background. But the constant questioning for the explanations during the communication made up for a lot of things that I could not see on the Internet. Because there are details that can't always be understood by looking at them online' (P7)

'ChatGPT is a great tool, but it's up to the person to experience and train the interpersonal skills. Growing in experience did make me confident in the interpersonal aspect.' (P1)

3.4 Data Analysis

As the results of the study, 100% of the respondents indicated that ChatGPT alleviated misunderstandings in intercultural communication and improved their cultural knowledge, language proficiency and other ICC subskills. This was mainly due to its advantages in elaborating on passive learning, such as cultural background and language learning. However, communicative competence relies more on active learning, i.e. trial and error and sum-

marization in real communication. Practical training for learners with diverse communicative situations is something that ChatGPT currently struggles to achieve through text generation.

Meanwhile, 86% of respondents were doubtful of the feasibility of LMs to solve communicative problems in real interactions. From contextual interaction observations, it can be concluded that interpersonal communication is often goal-targeted [9]. Whereas, trained in syntactic structure, ChatGPT is only able to be dialogue-targeted. The reason is that the principles of ChatGPT modes dictate that it lacks understanding of semantics [10], which prevents it from going deeper, shifting topics based on the purpose of the communication, and lacks insight. To quote the interviewee: 'Insight is based on facts, driven by hypothesis, conformed to logic, and based on experience gained through experiments.' (P1). ChatGPT, however, is trained on Internet datasets, and its process of mobilizing databases to generate statements is not underpinned by logical reasoning and practice.

4. Conclusion

The results of this study show that the effect of ChatGPT on the enhancement of ESL's cultural competence and language proficiency should not be underestimated due to its advantages in word processing. Similarly, ChatGPT shows the potential to mitigate cultural misunderstandings. However, it is difficult for ChatGPT to increase the experience of learners' communicative competence through effective communicative training, thus having a limited effect on the overall improvement of ICC. Besides, while ChatGPT meets the need to keep dialogue going, it is difficult to orient goal-targeted communication. Therefore, to maximize the benefits of ICC enhancement, L2 learners can incorporate ChatGPT to cope with misunderstandings caused by cultural knowledge gaps and enhance wording sensitivity in the communication of shallow or formal relationships (e.g., between teachers and students, colleagues).

The limitation of this study is that only a qualitative analysis of the ESL side of intercultural communication was carried out and not from the perspective of the receptive discourse side of the communication (the object of communication). This limitation defines that the findings of the study only reflect the potential and limitations of ESLs, as the party with a lack of linguistic and cultural knowledge, relies on the mediating role of ChatGPT to enhance IC. The fundings does not account for the satisfaction of the communication recipients in the process. Future research could refine the perspectives of the research participants, to explore the role of ChatGPT in bridging databases in multicultural contexts of communication. Because mar-

ginalized groups in developing areas have difficulty accessing the internet, which leads to information deficiencies in the ChatGPT database. Therefore, the opportunity to input missing information into ChatGPT could be found in intercultural communication with more cultures that are out of the domination language, and the judicious use of ChatGPT in the communication.

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